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APPLICATIONS

Tentative or final registration should be made by telephone as soon as practicable. Apply by letter, telephone, or purchase order to Continuing Engineering Education Program, George Washington University, Washington, D.C. 20052, (202) 676-6106, or the toll free number (800) 424-9773.

SPECIAL COURSES

Arrangements can be made to design certain courses to meet the needs of an individual activity for presentation on or off campus.

OTHER COURSES

(Dates subject to change)

No.

IN WASHINGTON, D.C.

- 269 Construction Estimating (Feb 23-25)
- 112 Configuration Management (Feb 23-25)
- 355 Patent Law for Engineers and Scientists (Feb 24-26)
- 218 Medical and Hospital Control Systems (Feb 28-Mar 2)
- 251 Nonparametric Statistics (Feb 28-Mar 2)
- 398 Data Compression Techniques (Mar 2-4)
- 413† Application of One and Two-Way Radio Communications (Mar 5-Apr 16)
- 386 Statistical Design of Experiments (Mar 7-9)
- 259 Satellite Communications (Mar 7-11)
- 297 Mechanical Reliability (Mar 14-18)
- 417 Emergency Out-Patient Services (Mar 15-17)
- 401 Computer Architecture in Microprocessing (Mar 21-25)

IN MIAMI, FLORIDA

- 322M Computer Security (Feb 8-10)
- 391M Distributed Processing Concepts and Techniques (Feb 8-11)
- 376M Analysis and Prevention of Material Failure (Feb 14-18)
- 420M Life Cycle Costing (Feb 15-17)
- 278M Intensive and Coronary Care Units (Feb 16-18)
- 285M Distribution/Warehousing (Feb 28-Mar 2)

IN TIDEWATER CENTER, HAMPTON, VIRGINIA

- 310T Microprocessors (Jan 19-21)
- 252T Electromagnetic Compatibility (Jan 24-28)
- 224T Design-to-Cost (Feb 1-3)

IN SAN DIEGO, CALIFORNIA

- 203S Radar Systems (Jan 17-21)
- 349S Design and Prediction of Sonar Systems (Feb 28-Mar 4)

*Night Course

†Saturday Course

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DETACH ENTIRE PANEL AND MAIL TO:
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Please Note: We occasionally mail to selected lists which cannot be cross-checked against our files. Therefore, you may receive a duplicate of this announcement. If so, we hope you will pass it along to an interested associate.

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DISTRIBUTED PROCESSING CONCEPTS AND TECHNIQUES

April 11-15, 1977

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CONTINUING ENGINEERING EDUCATION PROGRAM

DISTRIBUTED PROCESSING CONCEPTS AND TECHNIQUES

April 11-15, 1977

ROUTE TO:



THE
GEORGE WASHINGTON
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WASHINGTON, D.C. 20052
(202) 676-6106
(800) 424-9773

DISTRIBUTED PROCESSING CONCEPTS AND TECHNIQUES

DESCRIPTION

This course is designed for engineers, computer scientists, and data processing managers who need a better working knowledge of distributed processing techniques as applied to complex computing problems. These techniques include the construction of powerful computing systems by coupling multiple small computers; the use of networks to allow sharing of computer resources; and the application of computing power at the point of need in geographically dispersed systems. The basic building blocks of distributed systems will be described, as will techniques for combining these blocks into powerful, cost effective systems. Case histories will be presented to familiarize the participants with the tradeoffs and design issues involved in distributed systems.

COURSE OUTLINE AND SCHEDULE

First Day

Introduction

- Definition of distributed processing
- Application areas amenable to distributed processing techniques
- Classes of distributed processing
- Components of distributed processing systems
- Examples of distributed processing systems

Minicomputer Systems

- CPUs
- Peripherals
- Software
- Communications capabilities

Second Day

Building Large Systems from Small Computers

- Types of systems
- Multiprocessors
- Coupling minicomputers
- Software considerations
- Division of functions
- Tradeoffs vis-à-vis large computers

Case History — Reservation Type System

- Requirements
- Original large computer approach
- More successful multiple minicomputer approach

Third Day

Shared Resource Systems

Communication Concepts for Distributed Systems

- Circuits, modems, line types, protocols
- Multiplexing and concentration
- Front end computers
- Line costs

Networks

- Packet switches
- ARPA net

Distributed Data Bases

Resource Sharing Applications

Case History

- A distributed computer as a node in a network for distributed processing

Fourth Day

Intelligence at the Point of Use

- Classes of problems
- Division of functions
- Application of communications
- Tradeoffs vis-à-vis centralized approach
- Microprocessors
- Intelligent terminals

Case Histories

- Distributed warehouse order entry and inventory control
- Retail point-of-sale system

Fifth Day

- Design tools
- Design methodology
- Design examples
- Reliability of distributed systems
- Testing of distributed systems
- Management of distributed systems
- Review of concepts
- Future trends

INSTRUCTORS

John H. Carson is a member of the technical staff of the MITRE Corporation. His present work deals with the study and design of special purpose minicomputer systems. His past experience includes work in conjunction with Lehigh University and Bell Telephone Laboratories on the development of minicomputer controlled test equipment. He is also a lecturer for the American University in the Center for Technology and Administration. Mr. Carson is currently a Ph.D. candidate at Lehigh University and holds a B.S.E.E. (Cum Laude) and a M.S. in Information Science.

Burt H. Liebowitz (Course Coordinator) is vice president of Real Time Systems for International Computing Company in Bethesda, Md. He was responsible for the design and development of real time software for the off-track betting system used in New York City. He is also involved in studies relating the use of minicomputers to telecommunications.

Arnold C. Meltzer, D.Sc., is Professor of Engineering and Applied Science at George Washington University and currently chairman of the Department of Electrical Engineering and Computer Science. He is co-author of the text *Principles of Digital Computer Design*, Vol. I (1975) and currently is writing Volume II.

FEE

The fee for the course is \$500. This includes lecture notes and supplies. Make checks and purchase orders payable to GWU, Continuing Engineering Education. Free parking is provided. Participants may delay payment until arrival.

LOCATION AND HOURS

Orientation will be at 8:15 a.m. on the first day; classes will meet from 8:30 a.m. to 4:15 p.m. daily in Room 641 of the University Library, 2130 H St., N.W. (corner of 22nd and H), Washington, D.C. The course will terminate at noon on Friday.

HOUSING AND MEALS

Housing and meals are not provided. However, there is a wide variety of hotels, motels, and restaurants nearby. Information on available accommodations will be sent if requested.

CERTIFICATE

A Certificate of Completion will be issued to those attending the full course.

CONTINUING EDUCATION UNITS (CEU)

Continuing Education Units (3.0) will be awarded for the satisfactory completion of this course. The CEU is a uniform unit of measurement for recording noncredit learning in qualified continuing education programs. It provides a standardized means for business, industry, and government to measure in-